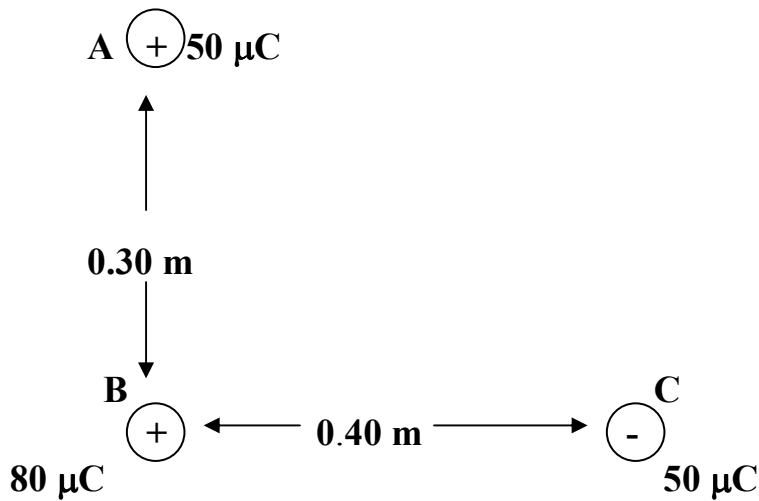


Example 10. Re-examine the diagram from Example 4 (see below). Find the potential energy of particle B due to the other charges.



E_p is a scalar quantity, so no vector analysis is needed.

→ Find the potential energy "B" contains due to each particle:

$$E_{p(AB)} = \frac{(9 \times 10^9)(50 \times 10^{-6})(80 \times 10^{-6})}{.30}$$

$$= 120\ \text{J}$$

$$E_{p(BC)} = \frac{(9 \times 10^9)(80 \times 10^{-6})(-50 \times 10^{-6})}{.40}$$

note! ↙

$$= -90\ \text{J}$$

$$\therefore \boxed{E_{p(\text{total})} = 120 - 90 = 30\ \text{J}}$$